



## GIS Module Exercises

This example covers creating a new Project Unit for analysis purposes and assigning plots to it so they will be available in the FFI **Query Builder** or **Reports and Analysis** functions. If you wish to work through this, you will need to have the FFI GIS module installed, and you will need to have plots with coordinates and GIS data to match. The plots and data presented here are from Wind Cave National Park.

### In these exercises you will:

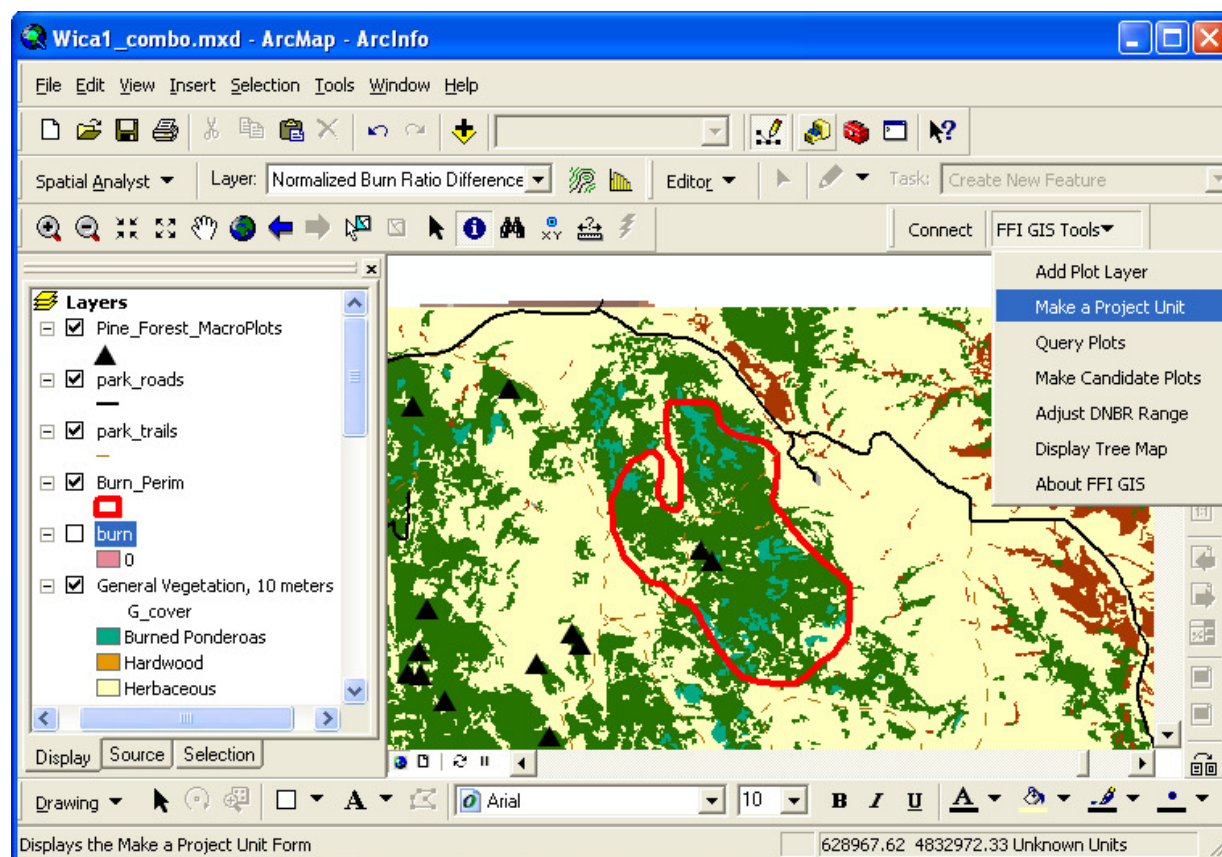
- 1) Create a new Project Unit
- 2) Select Plots in the new Project Unit
- 3) Analyze plots in new Project Unit

### Exercise 1: Create a new Project Unit

First, create a new Project Unit raster layer for the terrain you wish to analyze. In this example, we will use burn perimeter and vegetation cover raster layers. Spatial Analyst has been used to convert a polygon burn perimeter to a raster.

1.1 Log in to the FFI database.

1.2 Select **FFI GIS Tools, Make a Project Unit**.



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- 1.3 The **Make a Project Unit** dialog window opens. Select the **New** radio button under **Choose a Project Unit**.
- 1.4 Assign the **Name** "Burn\_temp" and under **Objective**, enter "temporary burn analysis".
- 1.5 Under **Choose Layer and Field**, highlight the "burn" raster layer and the "Value" field.

**Make a Project Unit**

Choose a Project Unit

☐ Existing ☐ **New**

Name: Burn\_temp

Objective: temporary burn analysis

Description:

Comment:

Choose Layer and Field

Raster Layer

- burn
- General Vegetation, 10
- Normalized Burn Ratio I
- WICA Boundary Grid
- All Roads Grid
- Road Distance Grid
- Surface Hydrology Grid
- Surface Hydro Distance
- Brun Units Grid

Fields

- VALUE**
- COUNT

Grid type: Integer  
Field type: Number

Include a Value Range for Layer

Min: Choose Value Max: Choose Value Add Remove

Layer	Field	Min	Max

Include Discrete Values for Layer

Value: Choose Value Add Remove

Remove val -->

Layer	Field	Values

Previous Creation Code

Cancel Save As...

- 1.6 Under **Include Discrete Values for Layer**, select the value for the burn (zero, in this example). Note that the value is copied to the **Add** box to the right of the drop-down, but not to the list below.

Include Discrete Values for Layer

Value: Choose Value Add Remove

Remove val -->

Layer	Field	Values

Include Discrete Values for Layer

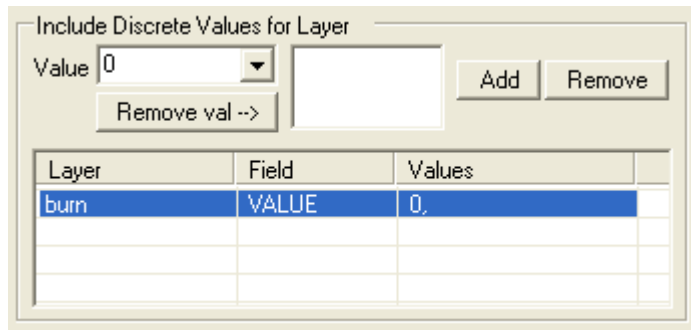
Value: 0 Add Remove

Remove val -->

Layer	Field	Values

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- 1.7 Click the **Add** button to put the value for this layer in the list of layers.



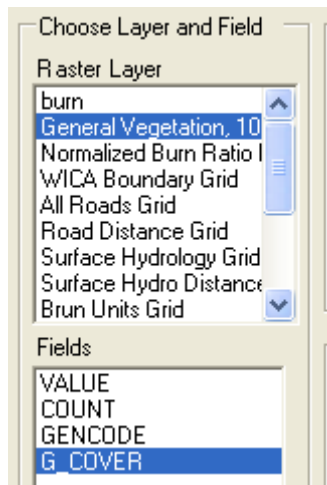
Include Discrete Values for Layer

Value: 0

Buttons: Add, Remove, Remove val -->

Layer	Field	Values
burn	VALUE	0,

- 1.8 Under **Choose Layer and Field**, highlight the “General Vegetation” raster layer.
- 1.9 Select the “G\_Cover” field. (In this example, the vegetation raster has a field for generalized vegetation.)



Choose Layer and Field

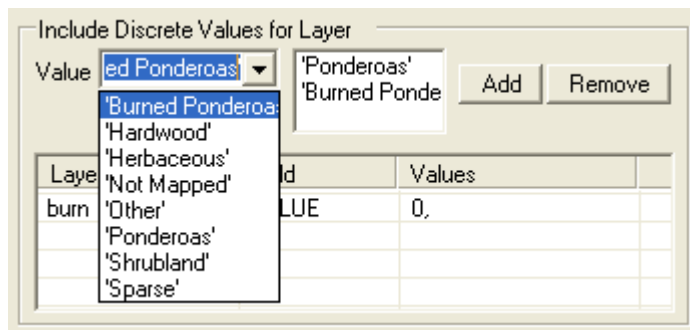
Raster Layer

- burn
- General Vegetation, 10
- Normalized Burn Ratio I
- WICA Boundary Grid
- All Roads Grid
- Road Distance Grid
- Surface Hydrology Grid
- Surface Hydro Distance
- Burn Units Grid

Fields

- VALUE
- COUNT
- GENCODE
- G\_COVER

- 1.10 Under **Include Discrete Values for Layer**, select first the “Ponderosa”, then the “Burned Ponderosa” values (note that both values will appear in the **Add** box).



Include Discrete Values for Layer

Value: ed Ponderosa

Buttons: Add, Remove

Layer	Field	Values
burn	VALUE	0,

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1.11 Click the **Add** button to put this layer into the list of layers.

**Make a Project Unit**

Choose a Project Unit

☐ Existing

☒ New

Name:

Objective:

Description:

Comment:

Choose Layer and Field

Raster Layer

- burn
- General Vegetation, 10
- Normalized Burn Ratio I
- WICA Boundary Grid
- All Roads Grid
- Road Distance Grid
- Surface Hydrology Grid
- Surface Hydro Distance
- Burn Units Grid

Fields

- VALUE
- COUNT
- GENCODE
- G\_COVER

Grid type: Integer  
Field type: Text

Include a Value Range for Layer

Min:  Max:

Layer	Field	Min	Max

Include Discrete Values for Layer

Value:

Layer	Field	Values
burn	VALUE	0,
General Vegetatio...	G_COVER	'Ponderoas','Burned ...

Previous Creation Code:

At this point, make sure that each layer appears only once in the list of layers. If the layer appears twice, an error will result:

Include Discrete Values for Layer

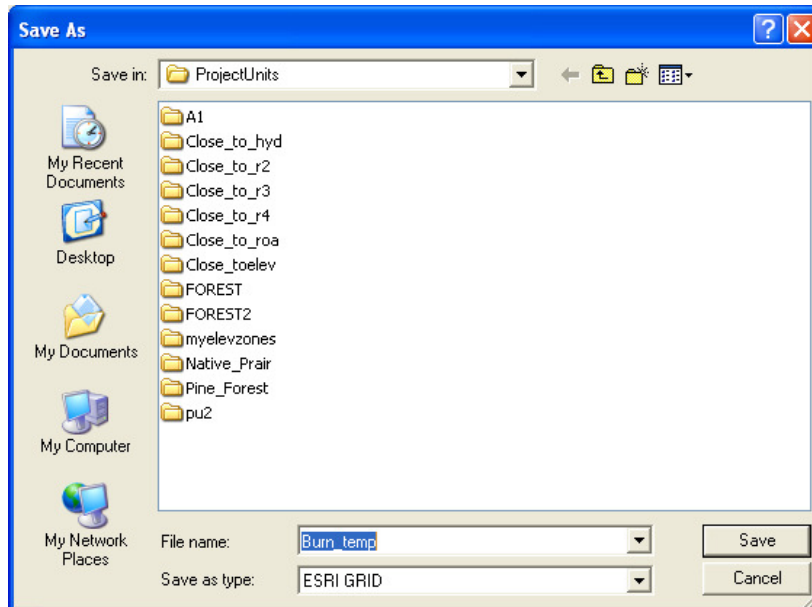
Value:

Layer	Field	Values
General Vegetatio...	VALUE	14,
General Vegetatio...	VALUE	16,

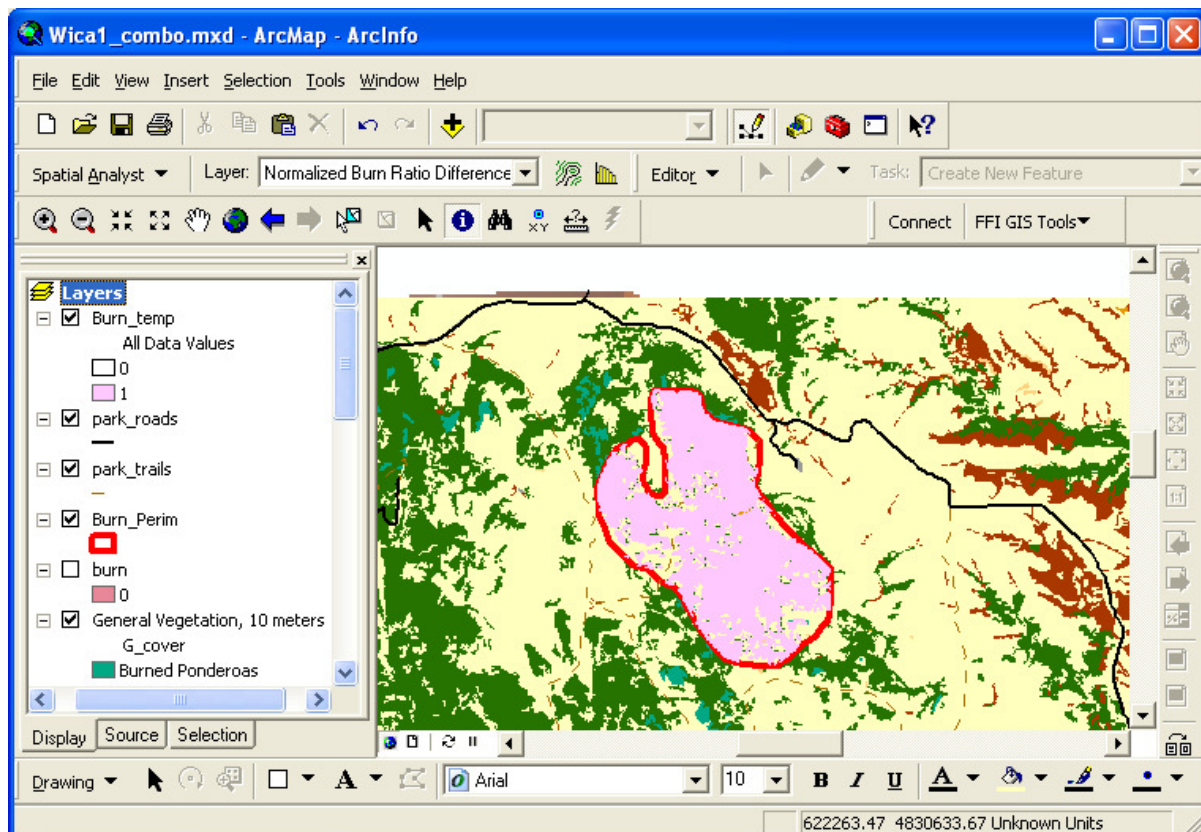
*incorrect approach!*

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1.12 Click the **Save As...** button. In the **Save As** dialog, choose a directory and name for your new raster layer.



After a few moments, your new project unit raster layer will display in the map. This represents all of the “Ponderosa” and “Burned Ponderosa” areas within the burn perimeter.



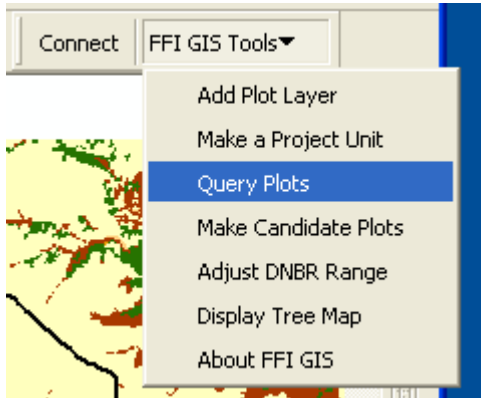


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### Exercise 2: Select Plots in the new Project Unit

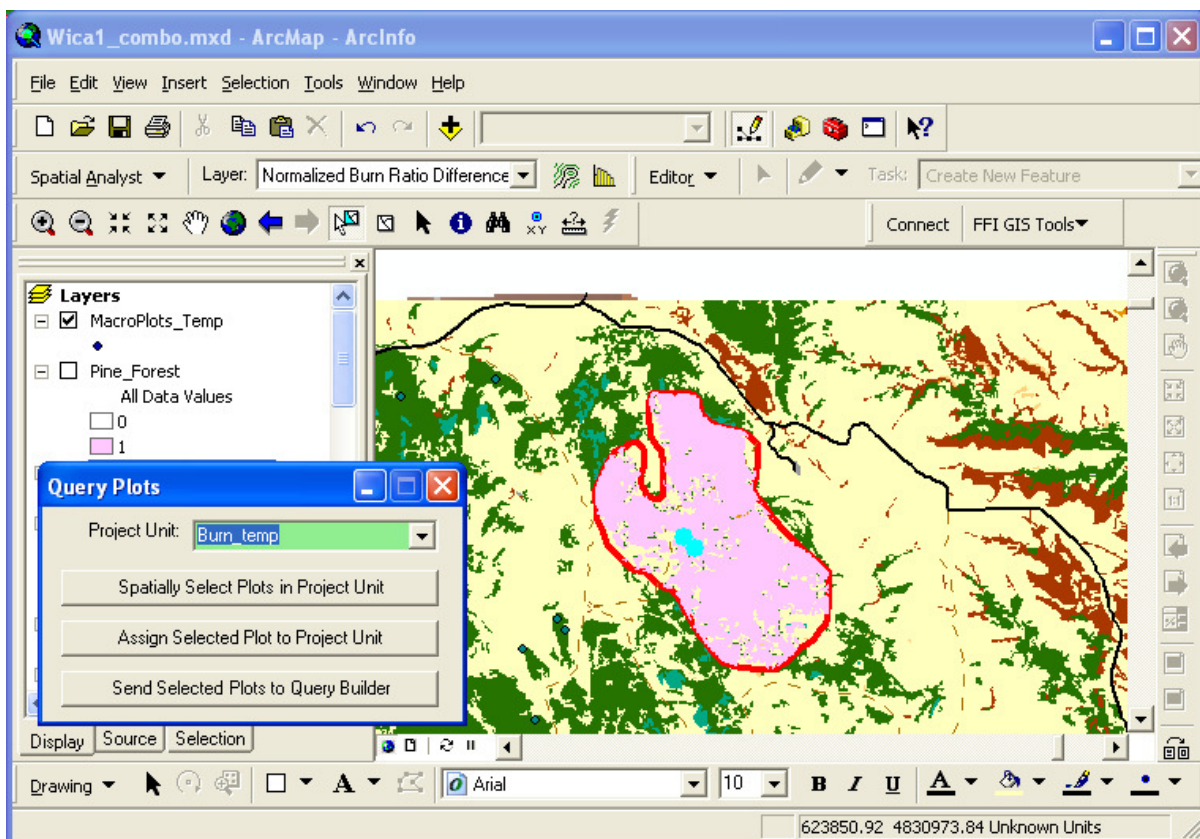
Next, we will select the plots that intersect our new Project Unit raster.

#### 2.1 Select FFI GIS Tools, Query Plots.



#### 2.2 In the Query Plots window, select the new “Burn\_temp” Project Unit.

#### 2.3 Click the **Spatially Select Plots in Project Unit** button. Those plots that fall within the raster will now be selected.

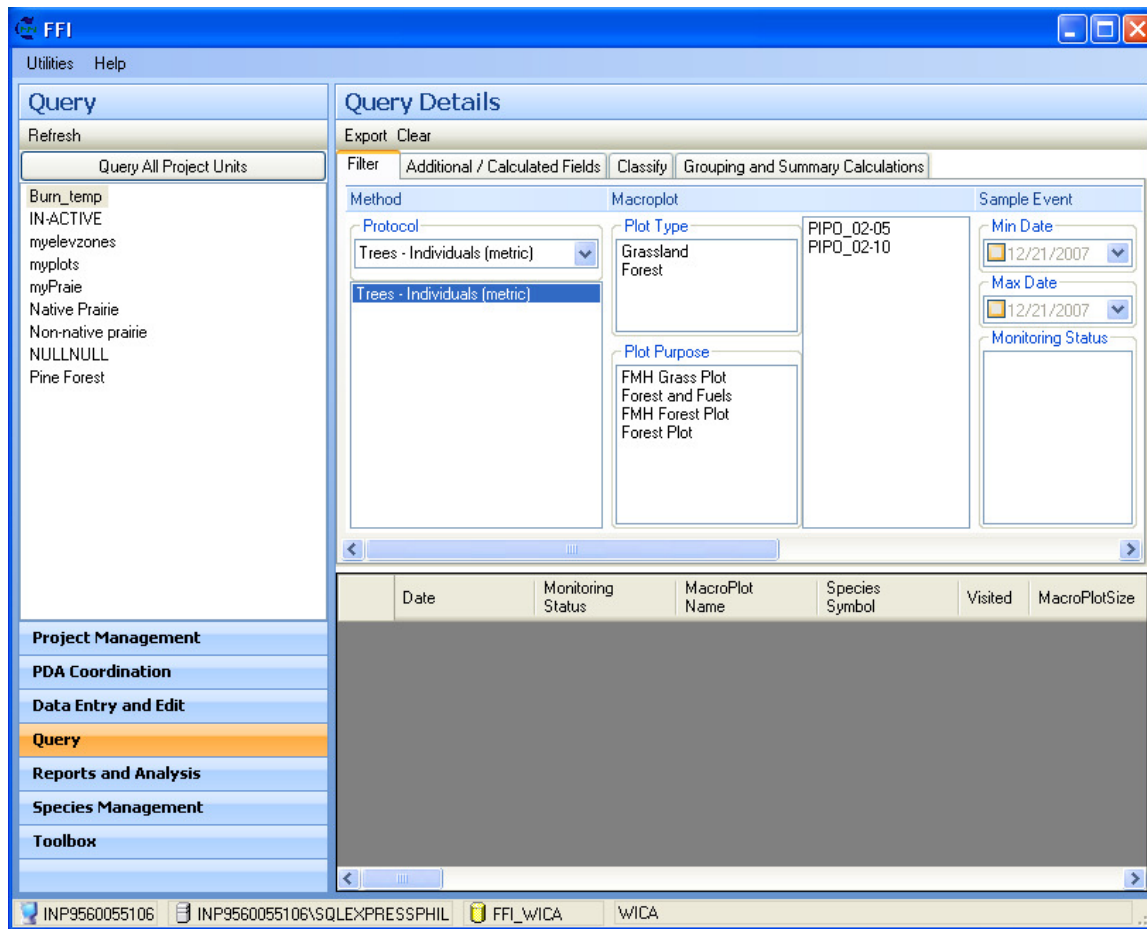


#### 2.4 Click **Assign Selected Plots to Project Unit**.

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### Exercise 3: Analyze plots in new Project Unit

- 3.1 Start (or restart) FFI. (You will not be able to see your new Project Unit in FFI if it was already running.)
- 3.2 Go to the **Query Builder** or to **Reports and Analysis**.
- 3.3 Select the new “Burn\_temp” Project Unit and note that analysis is restricted to the plots you assigned to it.



NOTE: You can delete the “Burn\_temp” project unit when you are done with it.